**Menlo Park Notebook #148 [N-80-10-08]**

This notebook covers the period October 1880. The entries are by Edison, Francis Upton, and Francis Jehl. The book contains notes and drawings by Edison regarding tests made of the first 69 lamps from Lot 2. Included also are statistical results by Upton and Jehl. Tests of lamps 70-98 can be found in Menlo Park Notebook #149. The label on the front cover is marked "Lamps Lot 2," "Oct 1880," and "Francis Jehl." The book contains 284 numbered pages.

Blank pages not filmed: 30-31.

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Lamps
Oct 8 1880
Frames

1

2

This is lot no 2

3

No 1

E.M.F 212 - 212 ✓

Res 31400 + 3200 / 200

C 48 ✓

141 V
173 R
5090 FT lbs

+15 Mins ✓

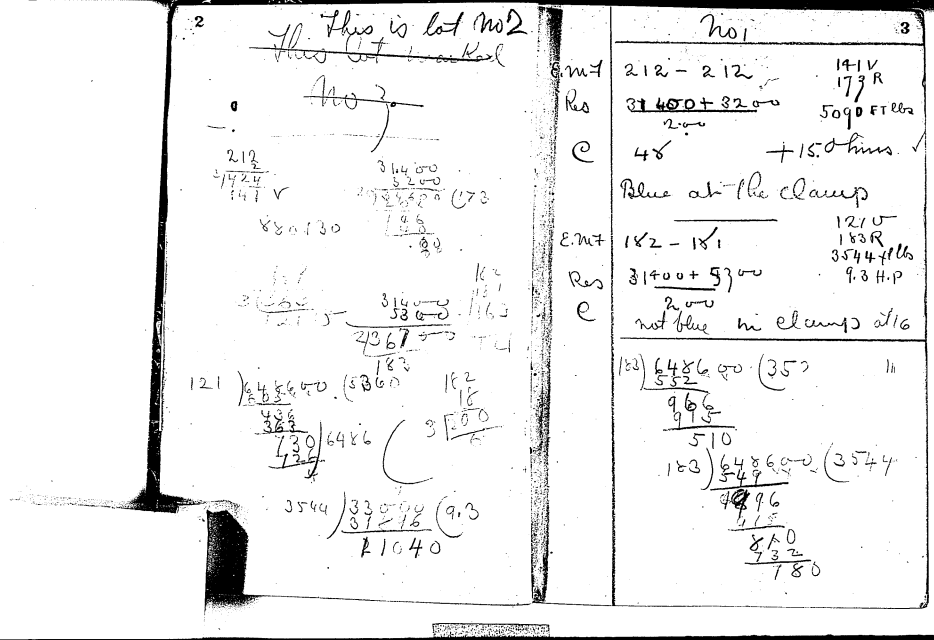
Blue at the clamps

E.M.F 182 - 181

Res 31400 + 5300 / 200

C not blue in clamps at 16

1210
183 R
3544 ft lbs
9.3 H.P



Slightly big

perfect: no spots

It was blue in the clamps.

Francis measured it after four minutes burning and it was only 36 Candles -

Now it is curious as he had tested it at 48 + made such a resistance that notwithstanding its blue it should have given 48 yet it only gives 36 apparently it has leaked since test; or — well what?

burned - Arc - R Coil burned

having combed out clamps on negatives

At least burned out 6-30

6

208
3|416
138 V

355

31400
159 R

843650

178
177
1
151 V

1155

163 R

5887870 (3594
489
967
815
1527
1467
702

2

E.mf 208 − 208 — 138 V, 159 R
R 31400 + 500 / 200 — 5243 miles
C 48 — Hg in the globe + 17 Ohms

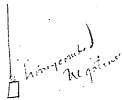
E.mf 178 − 177 — 115 V, 163 R, 3594 miles
R 31400 + 1500 / 2000
C 16

Little bright.

appears to be a crack here

No blue at clamps

Res burned

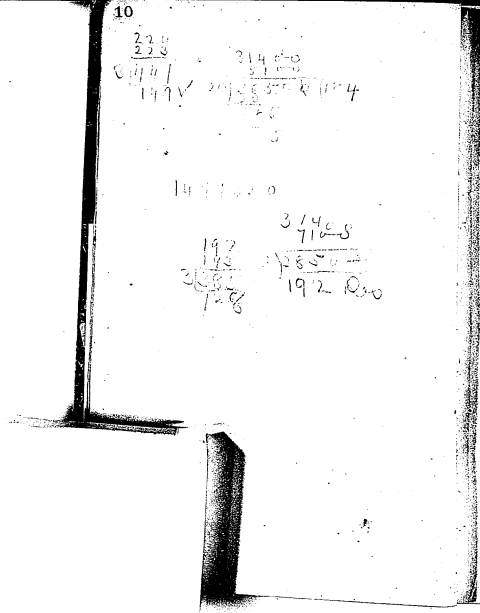



No crack in tube - appears blue

Few faint yellow specks inside that at bottom

One Spring

Block depict Carbon on positive







E.M.F. 224 − 223 = 149 V, 184 Res

R $\frac{31400 + 5100}{200}$ = 5345 ohms

C 48 + 50 ohms ✓

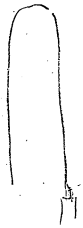
E.M.F. 192 − 193 = 1285, 192 Ω

R $\frac{7100 + 31400}{200}$ = 3776 ohms

C 16

192 | 725810 (3776
576
1490
1344
1461
1344
1170

~~perfect~~ no spots




blue at clamps Res burned
arc sprung

No cracks in tel

14

220
3 | 440
147 ✓

314 00
10 00
29 200 ✓ 3 (164 R
129
120
10

185
183
2
122 ✓

314 00
7200
122 12

Emt
R
C

48

Blue in globe

Emt
R
C

16

4 15

220 − 220 — 146 ✓ 164 R
31900 + 1500 — 5767 globes
200

185 − 183 — 122 ✓ 168 Rs
31400 + 7200 — 3924 globes
200

168 | 659360 (2924
504 xx
1553
1512
416
336
800
672

No 4

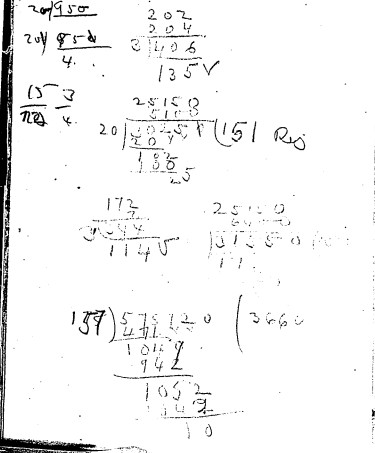
No Spot

Went in the glass
and sprung.
It was blue in the clamps
but not on 1st reading.

This lamp had no Res Coil

Glass all burnt pieces

18



5

19

E = 202 − 204 = 135 V

R = 25150 + 5100 / 200 = 151 Ω

C = 48 μF

+20 Ohms ✓

Little blue in the globe

E = 172 − 172 = 1140 V

R = 25150 + 6400 / 200 = 157 Ω

C = 16 μF

3660 μC

No spots

Blue at clamps

Res OK

big lot of Mess Carbon

tits not cracked

215 − 215
3140 + 1200
2000
1445
163 Res
48 + 10 Ohms ✓

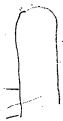
182 − 182
3140 + 350
2000
1210
174 R
3727 ft lbs
16





Emf R C

Emf Res C



little bright

not blue in lamp

Square break

res ok

no arc

globe clear -

$\frac{223}{223}$

$20\overline{)8000}$ $\quad 40$

$314\overline{)46}$ $\quad 148$ ✓

$31400$

$20\overline{)3270}$ $\quad 163$ R

$\frac{20}{127}$

$\frac{126}{70}$

$314$ $\quad 150$

$31\overline{)345}$ $\quad 150$ ✓

$172$

$3140$

$31\overline{)3450}$

$172$



E.M.F $\quad 223 - 223 \quad 148$ V

163 R

Res $\quad 31400 + 1300 \quad 5953$ ohms

$2000$ + 6 ohms

C $\quad 48$

little blue in globe

E.M.F $\quad 180 - 180 \quad 1205$ V

172 R

R $\quad 31400 + 310 \quad 3644$ ohms

$2000$

C $\quad 16$

$172\overline{)637929}$ $\quad 3644$

$516$

$1139$

$1032$

$1072$

$688$

$6500$

top edge of tit on neg. side little fused

little bright

Arc sprung Res burned

Jet cracked but only around top

heavy negative

blue clamps

32

$$\begin{array}{r} 212 \\ 3\overline{)424} \\ 141\checkmark \end{array}$$

$$\begin{array}{r} 31400 \\ 20\overline{)325400}\ (162 \\ 125 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 179 \\ 2\overline{)358} \\ 119\checkmark \end{array}$$

$$\begin{array}{r} 31400 \\ 29\overline{)1740}\ (60 \\ 171 \end{array}$$

$$\begin{array}{r} 171\overline{)62730}\ (366 \\ 513 \\ \hline 1023 \\ 1026 \\ \hline 1170 \\ 171 \\ \hline 1470 \\ 1368 \\ \hline 102 \end{array}$$

8

33

Emt $212 - 212$ 141V

R $314\text{oo} + 1100$ 162R

C $200$ 5436 ft/lb

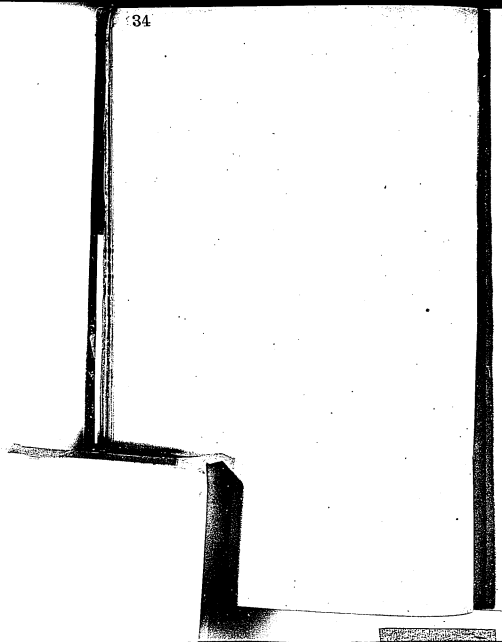
$4\times \quad +14\checkmark$

E.mt $179 - 179$ 119V

R $314\text{oo} + 2900$ 171R

C $200$ 3668 ft/lb

16



Cf Mosfet.

Blue at clamp x

Split in Clamp

Res burned - Arc

Sprung

Split clamp on negative
side and then —

top of tit on negative float
fuses no Cracks in tits.

215 / 2430 / 1430 ✓

3140 00 / 3200 / 4200 (173 / 46 / 60

188 / 3140 00 / 2828 / 2822 / 181

181 | 63173 00 (35-24 / 543 / 905 / 4422 / 7220





Cmf 215 - 215 — 1430

R 31400 + 3200 / 200 — 173R

C 48 — +12 ✓ — 5236 pells

Cmf 180150 — 1200 / 181R

31400 + 4800 / 2000 — 3524 pells

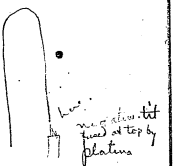
C 16

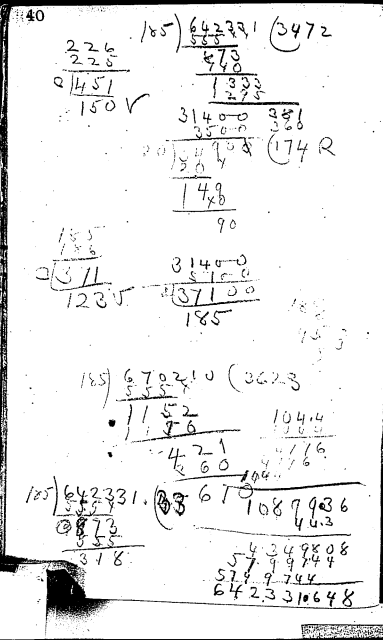
9. no spats.

Burned its Res - but Lamp
OK - but I notice that there
has been internal arcing
in Carbon at clamp.

Return wire -
---towards negative

Martin puts in another Res
& arc sprung.









EMT 226 − 225

Rs. 314000 + 3500

200

c. 48

150 v
1749
528 ft
+3 v

Blue at the lamp

EMT 185 − 186

Rs 314000 + 5700

200

c. 16

123 v
185
3623 ft

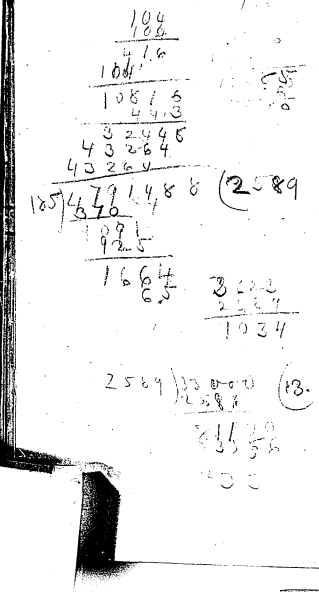
not blue at 16

18 = 32 1.079

3623
3472
151

185
186
64 | 376 (5.7
320
580
448
132

568
18
4464
568
10404





No 11

bottle low no spots

blue at clamp on first reading by martin - not blue on Howells reading

arc sprung = had scarcely any wire on Reo coil = platinum leading wire burned off at tit.

+ Carbon broken at top probably mechanically = I notice a crack in one of the tits perhaps air passed in + that make the arc

~~[illegible]~~ neg til fused at top.

Crack in Pastus tit

237
225
12
150 ✓

31400
20
1570
1570
178 R

191
190
1
150 ✓

31400
20
1570
178 R





Cut 227 − 225 — 150 ✓ 178 R 5599 Pulses

Rs $\frac{31400 + 4300}{200}$

C 48 +4 ✓

Cut 191 − 190

Rs $\frac{31400 + 5600}{200}$

C 16

11 - No spots ~~No P~~

(Marked effect of cooling split in clamp) - found split runs at negative pole -

Arc strong - Res Coil burned but 2 turns on it - platina wires fused off at negative tit

Howell says no glue but clamp to Positive block. - negative tit Cracks but probably by melting of platina - Think Carbon was mixed + broken mechanically

$\frac{420}{140}$ V

25150
5700
3625 - 4151 R

$\frac{174}{134}$ V
116 V
159 R

25150
6700
3625 - 4151 R





Emf 210 - 210 — 140 V, 151 R

R $\frac{25150 + 5100}{200}$ — 5750 ohms

C 48 .+14

Emf 174 − 174

$\frac{25150 + 6700}{200}$

C 16

12 No spots

Blue at clamp

Busted red - Res burned

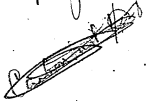
plate was wire fused with from 1/4 cast till plate top she a top of the fused at negative

Centers without only separated from of blade bu

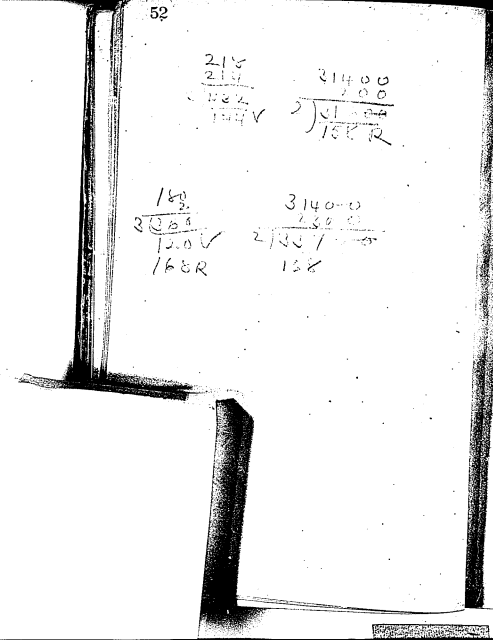
cued + split on clamp

Honeycombed

Negative dark



Little



Curr
R
C
E
Res
C





218 − 214 — 144 V
31400 + 200 — 158 R
200 — 5813 μμs
4 R + 10 V

180 − 180 — 120 −
31400 − 23000
2000
16

13 no spats Lot 2

Blue at clamp x

Went at 4:15 P.M. Oct. 16.

222
226
1448
149 V

31400
2500
2 ) 33900
169 R

207
129
336
136 V
177 R

31400
41000
2500
177

31400
3400
3337
177





Ellet 222 − 226 149 V

R 31400 + 2500 / 2000 169 R 5819 ohms

C 45 + 5 V.
Blue at the clamps.

136

Ellet 207 − 203

R 41000 + 31400 / 2000 177 ohms

C 16. Blue at 16

14 No spots low red
just to each
blue in clamp – bruised
Arc sprung Res burned
platina wires burned at tit

9. notice there is a resonance
Coil in here of 2 turns yet
this lamp was awful
low as compared to the others
platina fused down in position tit
Negative tit fused at top-
Beautiful shining carbon Carbon at Pos
of Carbon at Positive Side

Lth filament
w/ if arced internally
where it broke

210
212
3142
140 ✓

2|3140
157 R

170
340
112 ✓
168 R

3140
2200
168





Elect 210 212 140 ✓
157 R
55% yellow

R 3140 / 200

C 48 +15 ✓
Blue at the Clamp

Elect 170 — 170 113 ✓

Res 3140 + 2200 / 200 168 ohms

C 16
Little Blue at the clamp

15" -

bright

Blue at clamp x

Plastic spring
Res busted or
rather burned —

Carbon appears
Intact) —

198
196
3)394
131 ✓

25150
3500
20)28650 (143 R
20
86
80
6

163
162
3)327
109 ✓
1 R

25150
3500
20)28650 (143 R





EMF 198 − 196

$\frac{25150 + 3500}{2000}$

131 ✓
143 R
5316 ft-lbs
+ 24 ✓

R

C .48
Hg in the globe

EMF 163 − 164

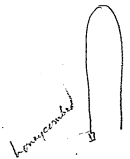
R $\frac{25150 + 5300}{2000} = 152$ Ohms

C 16

No spots.

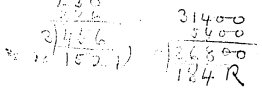
Blue at Clamps

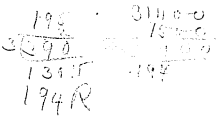
Restarted =




Carbon not fluted but honeycombing gone evaporation & formed face

Mercury in glass







17

E.M7 230 − 226 152 V
184 R
R 314 00 + 54 00 5560 ρ/cc
200
+1V

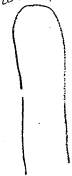
C 48
Blue in clamp

E.M7 195 − 195 130 V
314 00 + 75 00
200

C 16
Work blue at 16

17 – no spots.

blue at clamp No wire
Carrying shining towards
Positive and little over on




other side towards Negative
blocks Spots 1/4 inch long
Many shining spots.
Little fog in globe

215
218
31433
1445

31400
2500
1369
169 R

185
370
1235
179R

31400
4500
35700
179





Emf 215-218 1445
169 R
R 31400 + 25000 = 5488 ohms
2000
+29 √
C 48
Letter blue at the clamp

Emf 185 - 185 1235
Res 31400 + 4500 = 179 ohms
2000
C 16 not blue with 16

~~Aug 8/16~~ 18-

Blue at clamps slightly

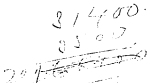
Lot - 2

broke 2.30 P.M. Oct-16

No resistance.

215
215
431
143 Ω

31400
2000
33400
167 Ω







Emit 215–216. 143 Ω

R 31400 + 2000 / 2000 167 Ro 5424 ohms

C 4 µ +12 V

Blue at lamps

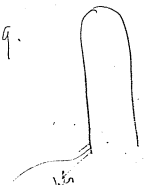
Emit 186 — 186 12 1/2 V

R 31400 + 35000 / 2000 = 174 ohms

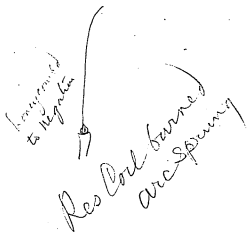
C 16

1 at blue at 16

19.




Blue at clamps



209
218
3 | 1419
139 ✓

3140Ω
200Ω
2 | 21500
158 Ro

175
177
2 | 352
117





Elect 209-210 139 ✓ 158 R

R $\frac{3140\Omega + 200\Omega}{200\Omega}$ 5410 Ro

C 48 +16 ✓

Little blue at one clamp

Elect 175-177 117 Volt

R $\frac{3140\Omega + 170\Omega}{200\Omega} = 1650$ hms

C 16

20
No Spots

Blue at clamps

Res burned arc sprang

340
340
214
160 V

3140Ω
2700Ω
5841.30
170 Ω

215
214
1





mA 240 – 242 160 V
170 Ω
R 3140Ω + 2700Ω 6671 ohms
200Ω
C 48 Too high
Blue at Clamp and
Neg in Socket

mA 215 – 216 143 V
R 3140Ω + 450Ω = 1790 ohms
200Ω
C 16
Blue at Clamp
at 16

21

No Res Carbin at
Arc spring glass
all busted left —

Blue at clamp x

204
2 00
3400
136 ✓

25150
2500
27650
76
165

172
17
1 15





Cut 204 − 205 1360
R. 25150 + 2500 / 200 1358R
5937Ω

C 48 +57√

Blue at the clamp
& Hg in glob

Cut 172 − 175 1156

R. 25150 + 4500 / 200 = 148 Ohms

C 16

Blue at the clamp
and Hg in the
globe C.

72

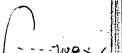
little dull red spot

Not blue at clamp

After burning some 4 hours,
looked badly spotted,
also blue at positive clamps.

broke at 11.40 A.M. 6/1/14.

Mr Edison changed the poles
a few minutes before it
broke, carbon then almost
entirely gone.



212
424
1410

25150
5900
110

182
364
546
3 | 546
6
12 1



23

Ckt 212 −212

141 V
155 Rec
5682 Meas
5682

$\frac{25150 + 5900}{200}$

R

C 48 +131

Blue at the Clamp

Ckt 182 −182 1218

R $\frac{25150 + 7600}{200}$ = 163 Ohms

C 16

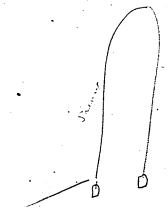
Blue at 16 C

16

4.2984362
1.1646037
7.5096683
B0.7545102 = 5682.

23- no op-ats

Blue at the clamps




Res 0 l/c no arc

Cracks nickel
fluffy Carbon
Shadow to Cracks

232
230
3|462
154 V

31400
500
20 | 3179 00
159 R

314
27
2|742
7 1

195
195
390
1 3 0



24 Oct 9

E.M.F. ~~215 - 215~~ 232 - 230

Res $\frac{31400 + 500}{200}$ 1545 159R

6616

C 48

Blue at the clamp

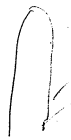
E.M.F. 195 - 195 130 V

R $\frac{31400 + 2900}{200}$.

C 16

Blue at 16 Candles

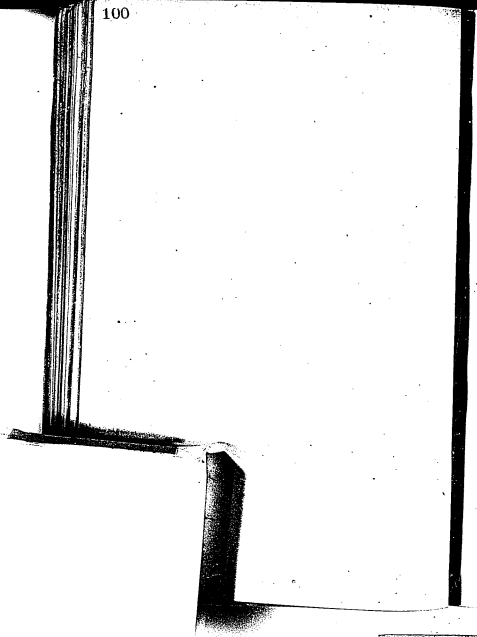
24




This spot is growing fearfully bright at spots = first bursted & bursted at bright spot. It was blue on clamps bodily Carrying in carbon - shining deposit on Carbon towards the positive - This lamp has no Resistance Coil:

Blue at Clamps

Studies These Crooks in metal of nickel Clamps both poles coated at Crooks with Carbon





25

Could not get This one up to 48 C. It was blue at the clamps. Too high

25 - low no spots.

Blue at Clamps

No Rescclain -

Arc Spring

Glass all broken

215
3|430
143 ✓

25150
4600
20|2975 148
97
80
175

2515
2x1=2
2x5=10

25150
6600
3175
20
17

176
176
32
17



26

Coat 215 - 215 143 ✓
148 R
R 25150 + 4600 / 200 +10 ✓
6120
C 48
Blue at clamp. but little

Coat 176 - 178 118
R 25150 + 6600 / 200
C 16
not Blue at 16

26 - No spots - quite bright

Res Coil - burned - arc spewing.

Shop card says split at clamp

Lamp blackening towards negative

Blue at clamp

Top negative tit fused - plate wire melted off on positive

Considerable block deposit on Negative as well as Positive

~~Carbon~~ Clamp split at Positive

229
230
2 1459
153 ✓

31400
5000
2 ) 26200
182





Cu 7 229 – 230 158 ✓ 182 R

R 31400 + ~~5000~~ 5000 / 200

@ 48 5690 Pl. lbs

Blue at 1" clamp and Hg in the glob

Cu 7 200 – 201 137

R 6600 + 31400 / 200.

@ 16

Blue at 16

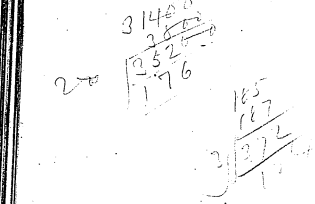
27 - no spots - low

Busted in glass all
to pieces. - No Res
Can with this lamp

Blue at clamp

$$2\overline{)436} \quad 218_2 \quad 145\checkmark$$

$$2\overline{)33700} \quad 31400\ 2300 \quad 168\ \text{Re}$$





28

E.M.T 218-218 145✓ 168R

R $\frac{31400 + 2300}{200}$ +9✓ 5540.

C 148
Blue at 48 at the Clamp

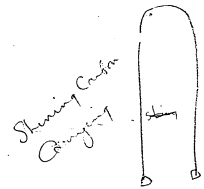
E.M.T 185-187 126

R $\frac{31400 + 3800}{200}$

C 16 Blue at 16 at the Clamp

28
no spots

Bluecat Camp
Res OK - No arc




No crack in tits = Mercury in globe

Cracked badly where
sealed -

205
205
31410
136 r.

31400
2500
2 | 33900
169



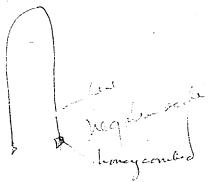
29

EMH 205 - 205 — 136 ✓ 169 Req
R 31400 + 2500 / 200 — + 21 ✓
C 48 — 4850

EMH 177 - 178 — 1183
R 31400 + 3500 / 200
C 16

29 – no spots !

Blue at clamps



Res OK – glass clean

120

212
212
3 4
141V

2|314
157

121

30

Cut 212 – 212 141V
157 RES

R 31400 / 200 +13✓

C 48 5810

Blue at the clamp

Cut 184 – 185 123V

R 31400+1300 / 200

C 16

Cattle Blue at 16 at the clamp

30 Slightly (very) Sp. Gr. different places

Blue at clamps

deposit showing Carbon on positive side a few places no negative side. alternating with very black spots.

Mercury in globe - not cracked in tits vulcanite shell splitty nickel metal is coated with Carbon on Positive at Cracks I guess its the gases that attack.

30 Slightly (very) Spec Clay
different places

Blue at clamps

deposit showing Carbon on
positive side of few places
no negative side. alternating
with very black spots.

Mercury globs - not cracked
in tits natural thick splatty
nickel metal is coated
with Carbon on Positive at Cracks
I guess its the points that
attract.

230
3 | 460
153 V

31400
2 | 37700
185 R

205
3 | 1146
1146
7400
200
1 9 4



31

CM+ 230 − 230 153 V 185 R

R $\frac{31400 + 57000}{200}$ 57600

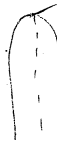
C 48 C
Blue at the clamp

CM+ 205 − 205 136

R $\frac{31400 + 74000}{200}$

C 16 Blue at the clamp

31 –



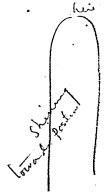
bright

9 notice that where our air bubbles 1/16 down into each bit on platinum did heat bring the gas out of platinum

shop slip says

(Split in clamp)

busted




no Res Coil –

Blue in clamp

no crack in tits

neg Nickel clamp no change

looks as if just put in

212 · 25150 / 5900 / 1414 / 20 R1050 / 1414 / 12

25150 / 200 = 125.75

5900 / 200 = 29.50

125 / 29 = 4 R9



32

Ckt 220-222 212-212

R 25150 5900 / 200 + 13 — 141 V, 155 Res

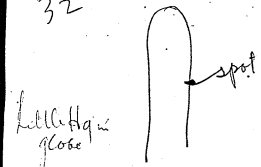
C 4 μ Blue at the Clamp — 5680

Ckt 179-180 — 120 V

R 25150 + 7500 / 200

C 16

32




Res Coal burned arc

Sparing

—towards negative

underwater light in clamps & arced Water.

Canton OK.

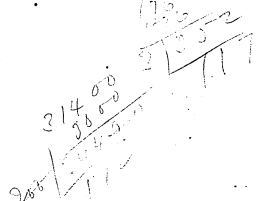
top pt on negative fused

Blue at electrode

plate was fused 1/4 inch up on Positive

$3\overline{)426}\ 213$ $\quad 142$ V

$2\overline{)326}\ 314$ $\quad 163$ V





Ent 213 – 213 142 V 163 Rec

R 31400 + 1200

2000

C 48 55-30 +13 V

Ent 176 – 176 117 V

R 31400 + 3000

2000

C 16

124 3/11

99
99
8.9.1
891
97 0 11

39204 | 34
39 2 04 | 4
4 3 1 2 | 2
3 7 2 | 6
5 9 | 6 4
4 9 | 10
9



33 no spots.

Blue at clamp slightly
- Res burned - are
Sprung -

Little Hg in globe

negative
Hemoglobin

224 / 449 / 149 ✓

314 45 / 2 | 359 / 179 R

914 - 20 / 6800 / 20 | 38 / 1 / 1 / 1

194 / 194 / 2 | 388 / 1 2 1



34

Cw7 224 – 225 — 1490 — 179 Pairs

R 31400 + 4500 / 200 + 5 / 5500

C 148

Blue at the Jump

Cw4 194 194

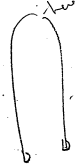
R 31400+6800 / 2000

C 16

not blue

34
slightly spotty

Blue at clamps




slightly fuzzy on positive side
shiny here
positive

Res OK no arch

by letting Canton Arc
Keeps up when top 1/2
inch away

217
217
2|434
144V

314
27
2|342
171R

178
178
0
178V

314
27
2
181 Res

181)5 16 3 0 (3407
543
735
724
1430
1448



Second lot. 1440

Cut 217 − 217 171R

R 31400 + 2900 / 200 +11√

C 48 5370

Blue in globe

Cut 178 − 178 1180

Q 31400 4900 / 200 181 Res 3407 plus

C 46

2.07188 20 2

4.14 7 7 6 4 0

1.64 4 0 3 6

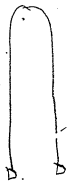
1.74 3 2 1 4

3.53 24 90 8 91

30407

34

no spots - bright



Shape slip
Says it is
broken at clamp
but very out-so
don't make much
difference

Res OK

no arc -

globe blackened
very much

Blue at clamp

no crack in tel

Notice unblackened globe that
there is a white streak no deposit
on this is parallel to Carbon
Carbon is which pole = both
clamps probably clamp

3|460
153 U

314
43
13457
178 R

3140 U
660 U
60
190 Q

198
3|580
126 V

19|76331 (3701
17
133
133
31 R

2.1846914
2.369382 8
1.666 4037
7.1495791
13.7653656

5825.9



Em 7 230 − 230 153 V
178 Res.

R 3140 U + 4300
200

C 48 5820

Em 7 190 − 190 126 U
190 R
3701 Rolls

R 3140 U + 6600
200

C 16

C

1846914
2.369382 8
1.666 4037
7.1495791
13.7653656

36. No Spots

Blue at clamps

Arc sprung — No Res

Clamps not black Carbon

intact both platens

wires burned off at

bits — globe clear

$3\overline{)420}$ $140$ ✓

$314$
$2\overline{)337}$ ✓
$169$ Res

~~478~~ $175$
$3\overline{)350}$
$1165$

$314000$
$4200$
$2\overline{)357}$
$178$ R

$175\overline{)581400}$ (3324
$350$
$621$
$525$
$\cancel{9}6\cancel{4}30$
$350$
$1400$
$1400$



Emf $210 - 210$ 140 V, 169 Res

R $\frac{314000 + 2400}{2\omega}$ $+16$ ✓

C $48$ $5120$

Blue in glass

Emf $175 - 175$ $1165$, $178$ R, $3324$ ft lbs

R $\frac{314000 + 4200}{2\omega}$

C $16$

117.
117
819
117
117
13689
44
54756
54756
60231
45-0
606.81.16
5-31
#75-8
708
50
354
147

177



37 No Spots
not blue at clamps

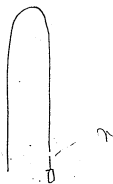



Plate with cuts
Res OK No
circ —

247
3|494
164 R

3765
3750

37650
+ 850
2 | 46500 | 230
46
91
90
1

3|420
140

37650
+ 1120
2 | 46770 | 1405
46
77
76
1

244|355
1772
1062
1220
1464
1220
244
2080

355





Ans 247 · 247

164 R
230 R

R $\frac{37650 + 850}{200}$

C 48

Blue in stable

Ans 210 − 200

1405
244 R
355

R $\frac{37650 + 1120}{200}$

C 16

38 Bright over top

No Res Coil = did not arc
split in clamp blue on
clamps -

White looking splash
at top of sealing

Think there is a Crack in the
Lit -

$$3\overline{)422}\quad 3\tfrac{2}{3}\tfrac{1}{5}\quad 1$$

$$2\overline{)3324}\quad 3\tfrac{1}{2}\tfrac{4}{0}\quad 1\,6\,7$$

$$9\overline{)3152}\quad 1\,7\,5\quad 1\,7\,7\quad 1\,1\,7$$





Ent 212 – 210

R $\frac{31400+}{200}$

C 48

Volts 140.6

157 Ohms + 13 √

5610

Blue in the glass

Ent 175 – 177 √

R $\frac{31400+2000}{200}$

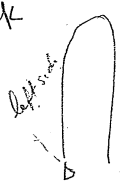
C 16

39

Bright on whole left side

Not blue on clamps

Res OK




a legelimeter beat up

no arc

171
168
3 | 513
113
314
22
2 | 336
168



Emf 200 − 205 — 135 Volts

R $\frac{31400}{200}$ — 157 ohms

C 48 — +21 V — 5140

Emf 171 − 168

R $\frac{31400 + 2200}{200}$

C 16

40

No Spots

Not blue on clamp

Resistance burned
arc Spoiling
platina melted at arc
~~Negative~~ positive lit

Probably spot accounted
through, ant. V appr arc
Spoiling.

25150
45 ( 1
130 | 6500 | 138
20 1
1860
180
65

173
173
346
5 | 2 0 0
175
1





EMF 207 ÷ 207 138 Ohm

R $\frac{25150 + 4000}{200}$ 146 Ohms

C 48 +16
5780
little Blue

EMF 173 — 173

R $\frac{25150 + 5500}{200}$

C 46

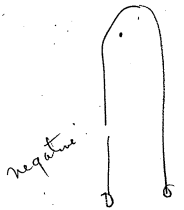
4/

No Spots

Not blue arc clamps

No arc Reorder

Cool ok



42

EMF 197 − 197 = 131.3 Volts

R $\frac{25150 + 5100}{200}$ = 151.2 Ohms + 25 √

C 48 5020

EMF 168 − 168

R $\frac{25150 + 5700}{200}$

C 16

42

No spots

Blue on clamps slightly

Lamps blue on clamps

Res burned are sparing

Negatim clamp

badly - Carbon not

wholly broken Hz

Connects it again + test good

OK - + then aired

again + tested at top

# 43

Ent 205-205 137 Volts

R $\frac{31400+1500}{200}$ 164 Ohms + 19

C 48 5-060

Little Blue in glob

Ent 179-179

R $\frac{31400+3200}{200}$

C 16

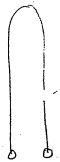
$31400 \div 3250 = 9$ R $34600 \div 173$

$179 \div 17 = 9$ R $35-8$ $\div 17$

45

Mr Sparks

Not Blue on clamp



- positive rail

- Globe slightly blackened

No are Rev Of

This lamp had been put on wrong pole, hence Brush was on P was burned longest on neg

44

Emf 217 – 217 — 145 Volts, 174 ohms

R $\frac{31400 + 3400}{200}$ + 9 = 5350

C 48

Blue on Ho glob

Emf 180 – 180

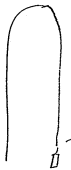
R $\frac{5200 + 31400}{200}$

C 16

31400 / 5200 / 36600 / 183 / 180 / 180 / 31360 / 120

44

No Spots




Res OK - No arc

Not blue on clamp

Slightly honeycombed in clamp

Clamp perfectly Clean

No Cra

25150
7380
32530
200
1202
120
165

166
167
333
(11



45

Hg in the globe

Emf 198–198 — 132 Volts
R 25150 + 5500 / 200 — 1530 ohms
C 48 — +24√ — 504d

Blue in the globe

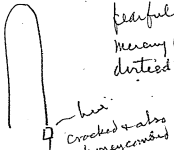
Emf 166–167
R 25150 + 7300 / 200
C 16

41°

No Spots

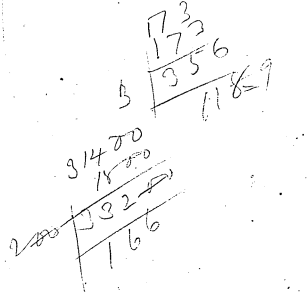
rubber at clamps

Res burned - arc Sprung




It was broken in large part Carbon undoubtedly by too tight clamping of Thermos

No blue on Clamps





46

Eff 203 – 204 136 Volts

R $\frac{31400 + 3}{200}$ 157 ohms

+ 20√

C 48 5230

Eff 173 – 173

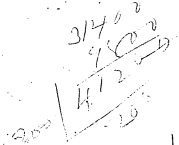
R $\frac{31400 + 1800}{200}$

C 16

46

Low Slightly brighter
on Right hand side
near top

Blue on Clamp





47

Elect 223 – 225 148 volts

R $\frac{31400 + 700}{200}$ 192 ohms

+ 6.

C 48 5050

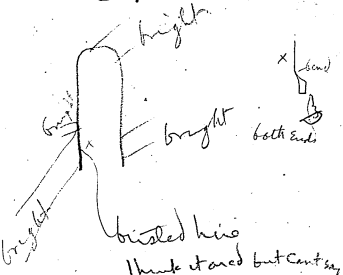
Bl. in the globe

Elect 185 – 187

R $\frac{31400 + 600}{200}$

C 46

47


bright
bright
bright
bright
bright
both Ends
bursted big
I think stained but can't say
The Res Coil of 47 got
very hot and silk
burned but lamp OK -
Not blue one lamp
Short
Slight scorch
but very bright

217 − 220 146 Volts

31400 + 2900 / 200 = 171 Ohms

48 + 8 = 55 30

Blue in the globe

180 − 175

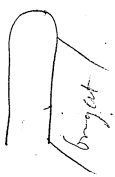
31400 + 4900 / 200

16

31400 / 200 = 157 / 16

180 / 175 / 5 / 1.1

48



burned in Carbon at

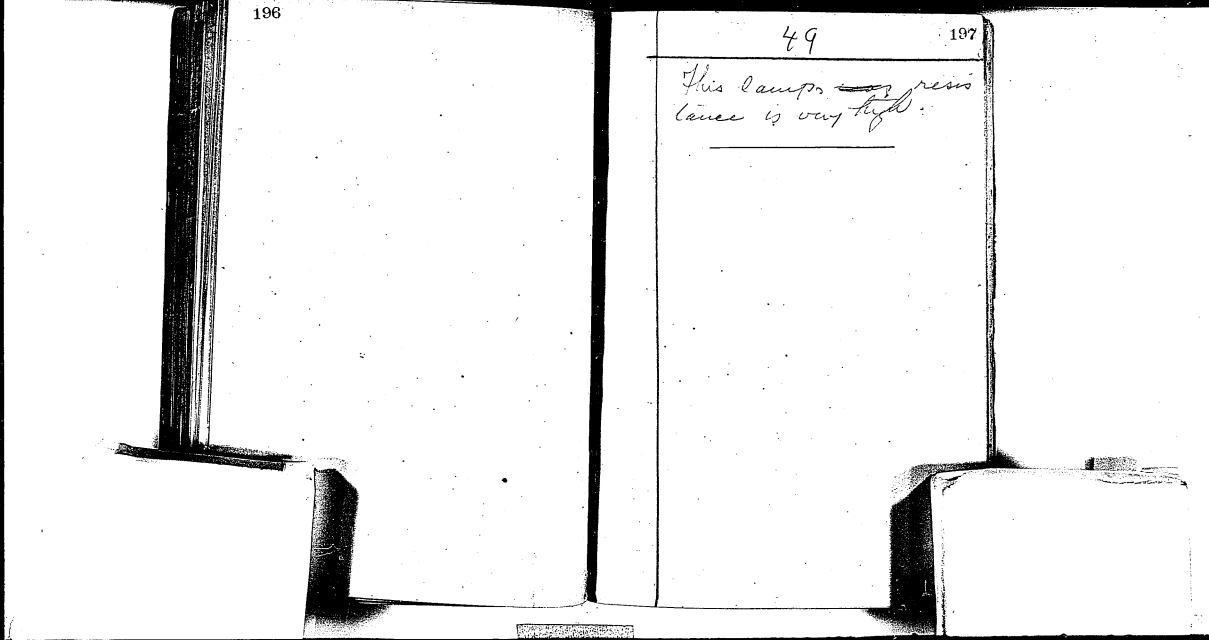
not blue but g

notice clamp block

No cracks in tito.

Ofolerance at A Lip

This lamps ~~~~ resistance is very high.



49

Dull
little bright
near centre of
left hand side

Cross thus, about
Red – Round
frosted glass - Knocked hole
in it – There is no Res
Coal with this lamp

CM7 205–204 137 Volts

R 31400 + 5700 185 Ohms

2000 +22 ✓

C .48 4450

Blue dot in the photo

CM7 177–178

R 31400 + 7500

2000

C 16

3140 / 75 / 3915 / 2 / 3 / 1

177 / 178 / 175 / 3 / 1 / 16

5-0

Little brighter on left
hand side

Nat. blue on clamp

5 = Honeycombed when after carbon
at clamp negative side

Res burned in arc spray

Carbon mechanically broken
Melted platinum wire off
at positive tip
dust fuses top of tip on
negative —

Mercury in glass

51

Ckt + 205 - 205 137 Volts

154.2

R 25-150 + 5700 / 200

C 48 +18 V

5400

Ckt + 172 - 170

R 25150 + 7200 / 200

C 16

51

No Spots

split clamp

Not blue clamp

52

Emf 224 − 228 — 152 Volts

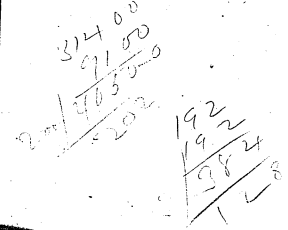
R $\frac{31400 + 7600}{200}$ — 1970 ohms +1/ — 5190

C 48 Blue in globe

Emf 192 — 192

R $\frac{31400 + 9100}{200}$

C 16



52

No spots

Carbon Intact - glass OK but an arc spring and burned platina leading wire off at tit - This lamp had no resistance coil, but about 2 inches wire -

No blue in 52 in clamps

VB

last one of the clock

Elect 200 − 198 — 133 Volts

R $\frac{25150 + 5500}{200}$ — 158 Ohms

+24V

C 48 — 4960

Elect 170 − 170

R $\frac{25150 + 7200}{200}$

C 16

53

No Spots

Not blue on clamp

glass clear - Res Oh

Received this 54 KW Oct 11 1880

Elect 220 220 — 147 Volts

R $\frac{31400 + 42000}{200}$ — 178 ohms + 7 ✓

C 48 — 5380

Blue wire [illegible]

Elect 185 — 185

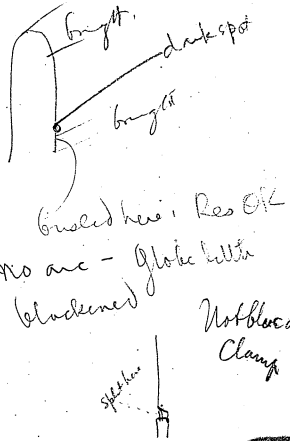
R $\frac{31400 + 6000}{200}$

C 16

31400
6000
37400
187

185
185
370
2 | 370
123

54


bright.
dark spot
bright
Grooved here. Res OK
No arc - Globe hits
blackened
Not blue on
Clamp
Split here

55

EMF 210 – 210

R $\frac{31400 + 1300}{200}$

140 Volts
163 Ohms
+15V
5320

C 48 little Blue in stock

Elect 172 – 172

R $\frac{31400 + 3100}{200}$

C 16

31400
31400
3100
200 | 3100
1700

172
172
344
8 | 1376
1376
0

5/4 no spots

Not blue on clamp

Res OK

Busted

No arc

178
181
359
179

31400
5403
368
184



# #756

Ent 220 – 220

147 Volts
179 Ohms
+9
5346

R 31400 + 3200 / 200

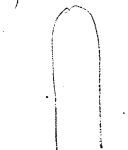
P 48
little Blue in globe

Ent 178 – 181

I 31400 + 5400 / 20

C 1C

56


lit not
Cracked
Bright
Buried wire – Re Coil
Covered Arc spring
Very blue damp
Little heat Rise
Mark end on negative
strongest

57

GW1 212 — 212 141 Volts
179 ohms

R 4400 + 3140 Ω
200

C 48 + 15 √

4920

GW1 180 — 153

R 3140 Ω + 6000 Ω
200

C 1·6

57

- little bright

+

west side Nat blue are clamps

Pos clamp little black.

- But at bend where

there was Graphite pot.

Res Ok - 4 turn Wrench

Blackened - Shop slip.

Phys Insulated Clamp

180
179
359
179 - 120

314 00
4000
2 | 9 5 0 0
177



58

Emf 215 – 214 .143 Volts

R $\frac{26000 + 314000}{200}$ 170 Ohms
+12
5330

C 4.8 little. Blue wire

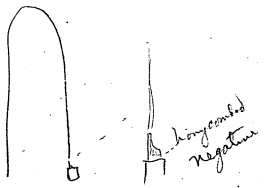
Emf 180 – 179

R $\frac{314000 + 4000}{200}$

C 16

58 -

both unequal.




Res did not burn
No blue in lamp
No crack in lit

175
175
-175
0

176 17

314
45
359
-314
45



59

Ent 210 – 210 140 Volts

R $\frac{31400 + 2500}{200}$ 169 Ohms +16

C 48 5120

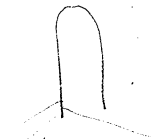
little Glue in tube

Ent 175 – 175

R $\frac{31400 + 4500}{200}$

C 16

59.



Will-light.

arc spring Res

burned- Carbon broken

at clamp on negative side

No blue at clamps

60

EMF 215 − 215 145 Volts

R $\frac{31400 + 3000}{200}$ 172 Ohms

C 48 +9√ 5420

EMF 185 − 185

R $\frac{31400 + 4300}{200}$

C 16

31400
4300
35700
200 | 357
178

185
185
0
− 162
23

60 OK no spots

Hg
Unsupported negative
No blue in clamp

arc must have spinning

Resistance burned glass + pt
wires OK = The vapor of
Carbon due to sudden heating
of the spot did the biz
no cracks in tits

61

| | | |
|---|---|---|
| EMF | 220 − 218 | 146 Volts<br>176 Ohms |
| R | $\frac{31400 + 3570}{200}$ | + 8V |
| C | 48 | 5360 |
| EMF | 190 − 190 | |
| R | $\frac{31400\ 5000}{200}$ | |
| C | 16 | |

31400
5000
36400
182

190
190
31380
126 121

61

Lt on negative frame at top

very slightly bright

Brushed here.

Arc spring Res Coil burned

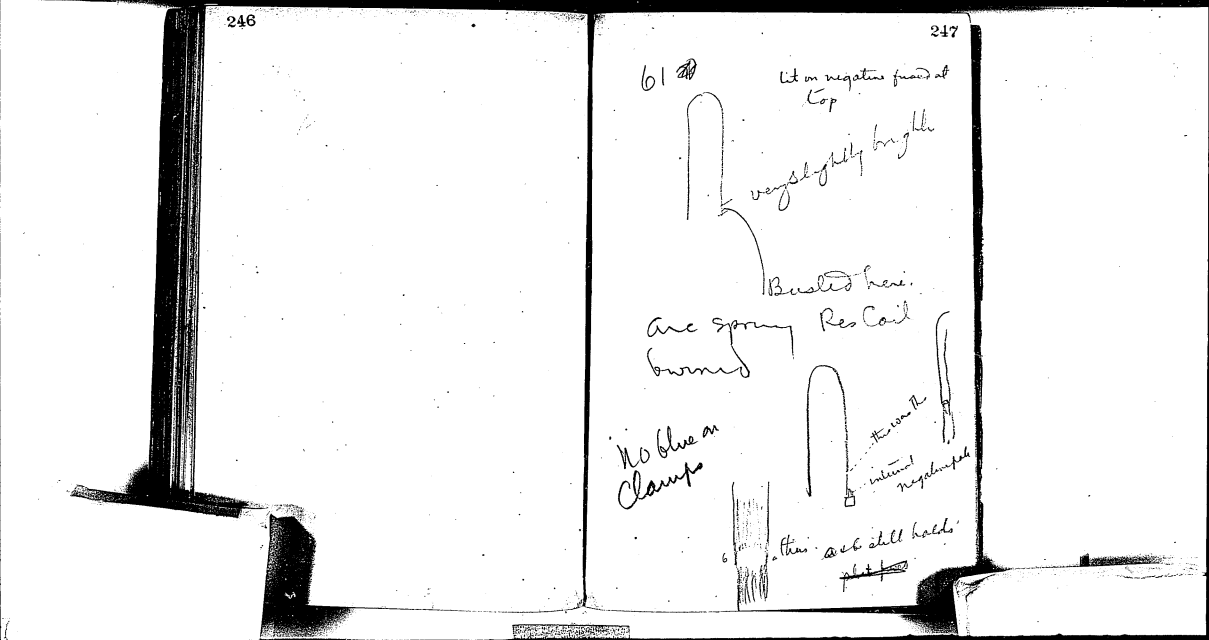
No blue on Clamps

thin wire

internal negative pole

6

thin arc & shell holder



Emf 200 − 200 = 138 Volts

R $\frac{31400}{200}$ = 157 ohms

C 48 + 24 = 4992

Emf 170 − 170

R $\frac{1700 + 31400}{200}$

C 46

170
170
3400
340
340
0

170
2 | 340
340
0
170
170
0

62 nipsats

Northwest clamp

~~No north~~

Res burned clamp melted to positive. Arc Sprung I was a split in the clamp as if Chunk Carbon was OK Except inside clamp at negative End

63



Ckt 230–228 153 Volts 184 Ohms

R 31400 + 550 / 200

C 48 5603

198–198

R 7500 + 31400

C 16

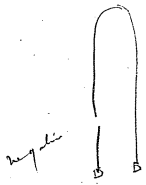
63
31400
35000
89
194

198
16
39
102

'63 - both unequal

Bluecoat clamps

No Resistance



64



The resolvance of
this is for light

64 – Cross. marg

spots

slightly glucan damp

No Res Escherichia

gCoccus

65

Cut 225 – 225 150 Volts
180 Ohms

R 31400 + 470 Ω
2 Ω +3√
5540

C 48
little Cube in Tube

Cut 192 – 192

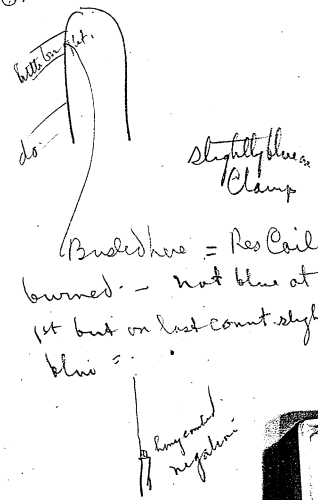
R 31400 + 6200
2 Ω

C 16

21400
6200
27600

192
192
3 | 384
128

65


bottle top first.
do
slightly blue as Clamp
Busbar hot = Res Coil burned. — not blue at 1st but on last count slightly blue =
Long end negative

EMF 217 217 145 Volts
170 Ohms

R $\frac{31400 + 2600}{200}$

C 4 r + 9l
5460

EMF 175 – 180

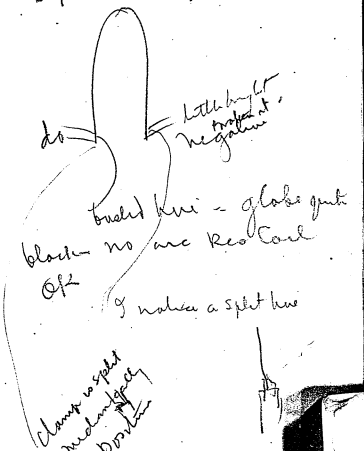
R $\frac{31400 + 4500}{200}$

C 16

$31400 \div 179 = 175$

$4500 \div 25 = 180$

67.


no cross lits
do
little bright
trochant at
negative
bucket knee - globe gut
bloater no are Resected
Off
9 makes a split hue
clamp is split
medullary
position
Blue on clamp

205
205
10
1567

25156
2200
27356
1367

25150
3500
28950
1447

160
162
322
159

25150
3500
28950
1447



67

Ent 190–190 127 Volts
137 Ohms

R 25150 + 2200
2000 + 28√

C 48

5220

Ent 160–162

R 25150 + 3500

C 16

This is the AX Lamp
Ra ||

67

No spots

No blue arc clamp

no mark

Res burned possibly clamp melted. Carbon broke

Carbon flew on neg clamp. rough towards negative side

58

Out 222–225 149 Volts 175 Ohms

R $\frac{31400 + 370}{200}$

C 48 +5 5620

Out 182–182

R $\frac{31400 + 5900}{200}$

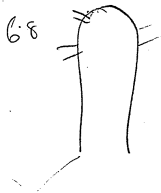
C 16

$\frac{31400}{5900}$

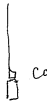
$\frac{37300}{200}$

$\frac{182}{564}$

$\frac{564}{121}$




brushed here. Res Coil Burnished
are spinning -




Blue at clamp

69

Elect 195 – 195 130 Volts
140 Ohms

R $\frac{25150 + 4300}{200}$ + 25

C 45 5350

Elect 160 – 160.

R $\frac{25150 + 4300}{200}$

C 16

25150
4300
29450
200 | 29450 | 147 25
200
945
800
1450
1400
50

~~10~~ 40 Lot-2

69 mozart

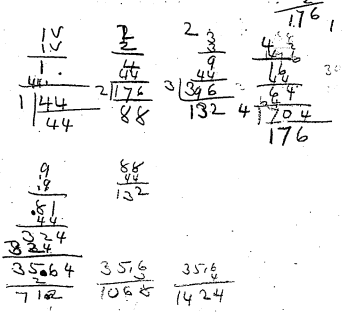
No blue ear clamps

marked split-ear-clamps on label

11.52 a.m.

Oct-16-80

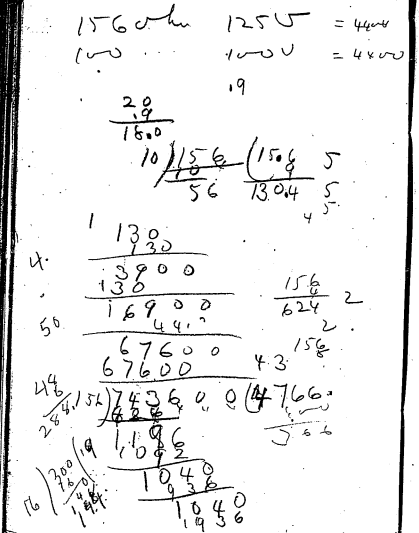
Res O.K.



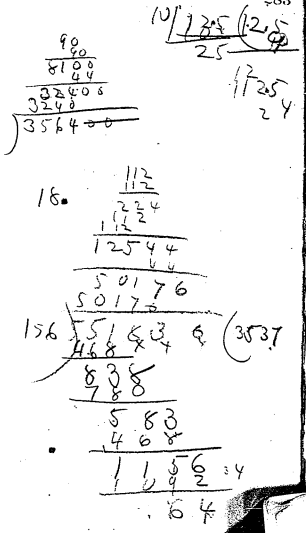
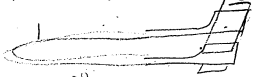
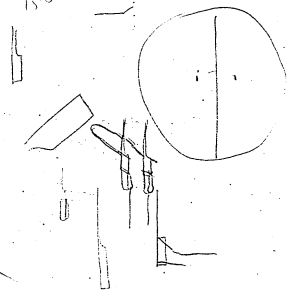
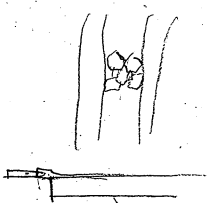


1 hour = 44
1 hr 2 hrs 3 hrs 4 hrs
44 88 132 176

.9
35.6 71.2 106.8 142.4







1 Volt = 100000000 units of Pot